

SeeMeCNC Guides

Droplit v2 Installing Firmware / Software

This How-To Guide will instruct you how to install firmware on the Mini-RAMBo and software on the Raspberry Pi 3 board.

Written By: SeeMeCNC

The screenshot shows the GitHub interface for the repository 'seemecnc / Firmware'. At the top, there's a search bar and navigation links for 'Pull requests', 'Issues', and 'Gist'. The repository name is 'seemecnc / Firmware' with 3 watchers, 0 stars, and 0 forks. Below this, there are links for 'Code', 'Issues 0', 'Pull requests 0', 'Wiki', 'Pulse', and 'Graphs'. A paragraph explains that this is a new repository for storing firmware for various machines. Below the paragraph, there's a summary bar showing 6 commits, 1 branch, 0 releases, and 2 contributors. There are buttons for 'New pull request', 'Create new file', 'Upload files', 'Find file', and 'Clone or download'. A list of recent commits is shown, including one by 'johnoly99' and a 'README.md' file. The 'README.md' content is displayed below, with the title 'Firmware' and two paragraphs of text.

This repository

seemecnc / Firmware

Watch 3 Star 0 Fork 0

Code Issues 0 Pull requests 0 Wiki Pulse Graphs

This is the new repo where we will store all firmware for our machines rather than being in each machine repo separately, as many machines use similar firmware with slight configuration changes

6 commits 1 branch 0 releases 2 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

johnoly99 Splitting out motor current, enstop and speed settings AND fixed pins... Latest commit ec178ff 3 hours ago

Repetier Firmware Splitting out motor current, enstop and speed settings AND fixed pins... 3 hours ago

README.md Added Repetier Based Firmware Directory 6 days ago

README.md

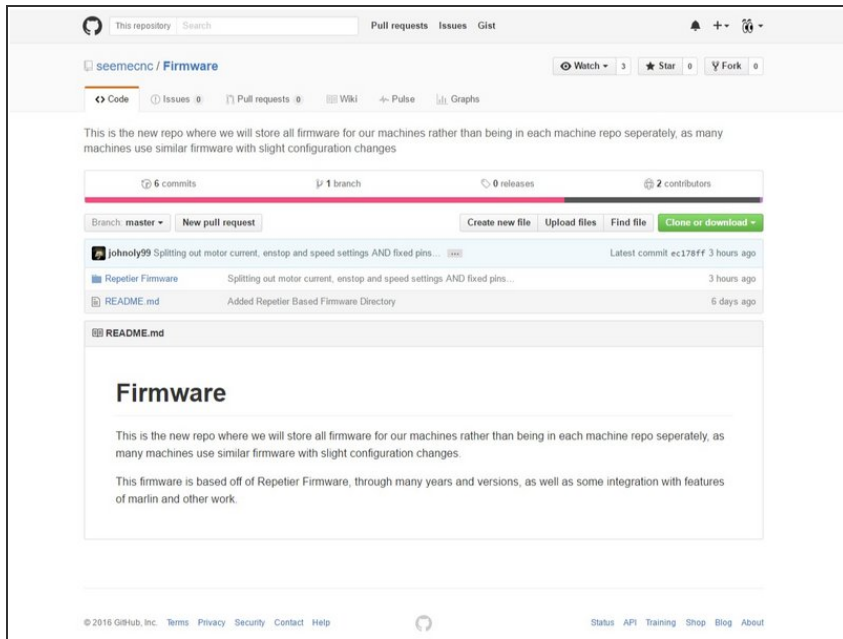
Firmware

This is the new repo where we will store all firmware for our machines rather than being in each machine repo separately, as many machines use similar firmware with slight configuration changes.

This firmware is based off of Repetier Firmware, through many years and versions, as well as some integration with features of marlin and other work.

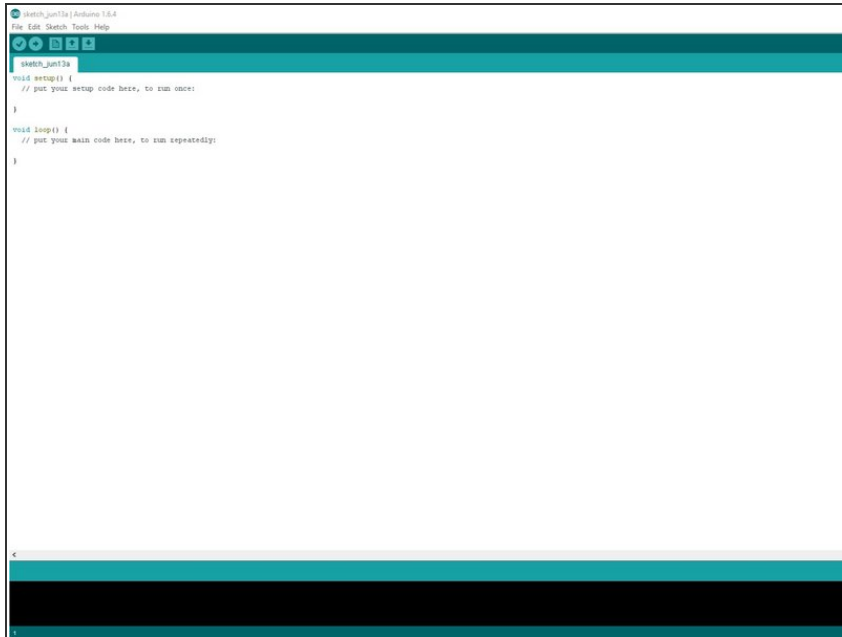


Step 1 — Download Firmware



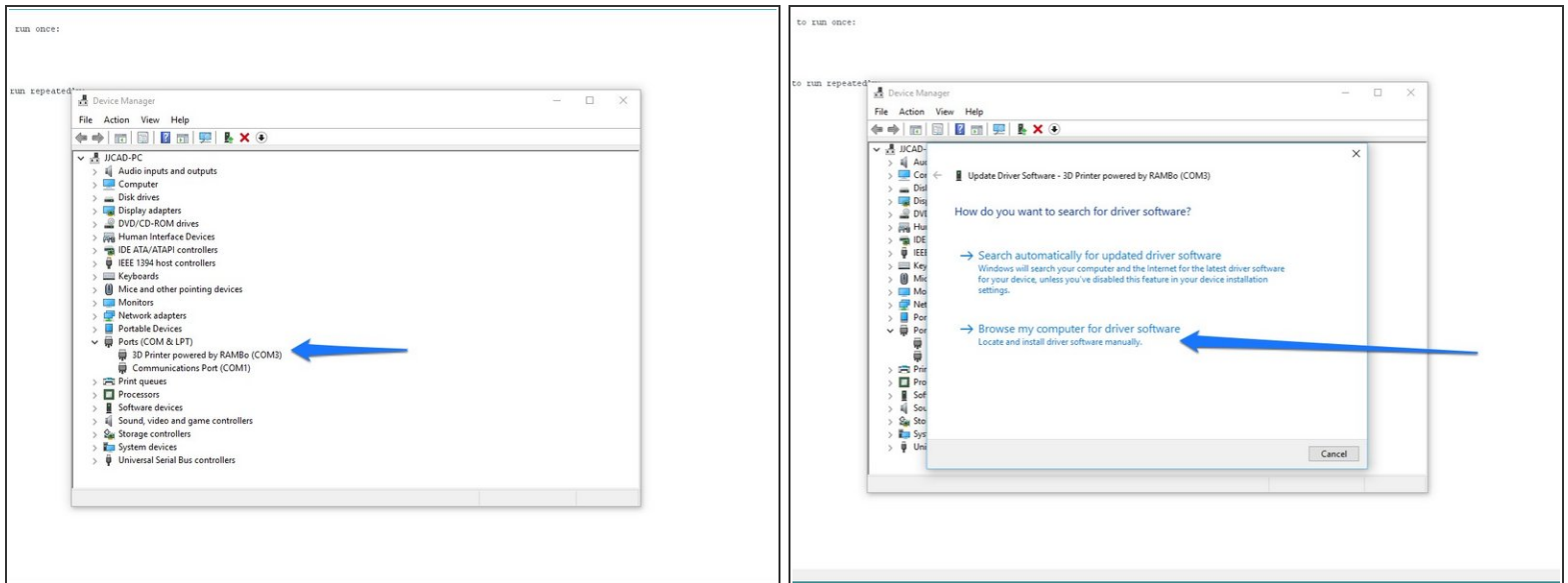
- We have created video Instructions of for this process which can be viewed here:
<https://youtu.be/OGmBq92IVpc>
- You can Download the firmware here:
<https://github.com/seemecnc/Firmware>
- Extract the files from the zipped folder.
 - If you are new to extracting files, you will need to go to the folder where the firmware was downloaded to (most commonly your downloads folder)
 - Right Click on the folder named: Firmware Master, and from the options available choose EXTRACT ALL.
 - Choose Extract in the dialogue box that pops up.
 - You can now copy and past the extracted folder of firmware files to your preferred location ie. Desktop, My Documents etc.

Step 2 — Install Arduino



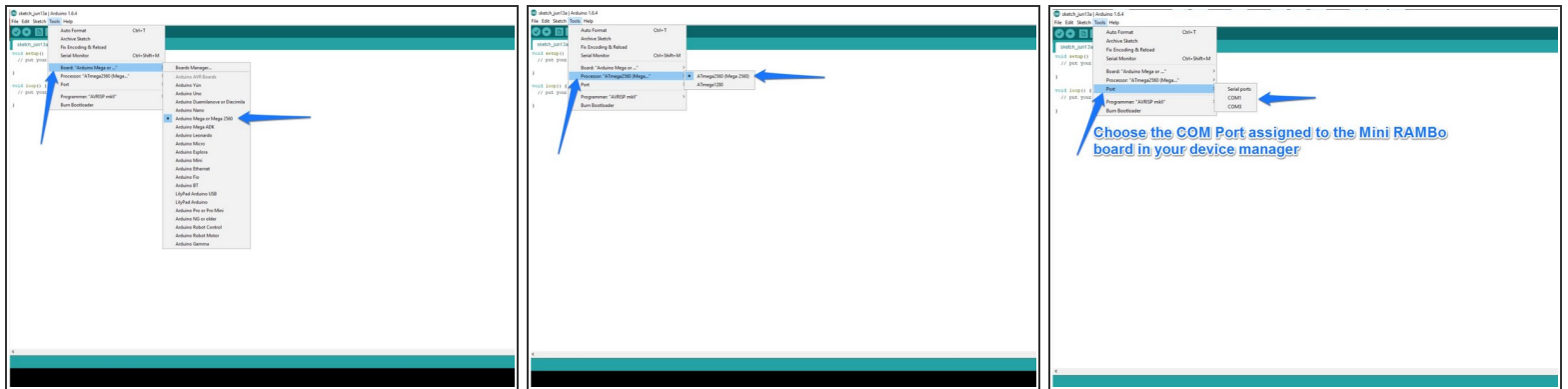
- In order to compile and upload the firmware to the RAMBo controller, you're going to need the Arduino IDE. This is an open source software development environment targeted at the Arduino family of ATmega-based micro-controller project boards. At its heart, the RAMBo controller is just an Arduino Mega 2560 with a lot of goodies attached to it.
- You can download the Windows, MacOS and Linux version of the Arduino IDE from here: <https://www.arduino.cc/en/Main/Software>. Choose the appropriate Platform. As of the time of this writing, we are using Arduino 1.6.4. There are many versions available of Arduino, but all are compatible.
- Start the Arduino IDE – you should be presented with a screen that looks similar to the first image on the left:

Step 3 — Install Window USB Driver



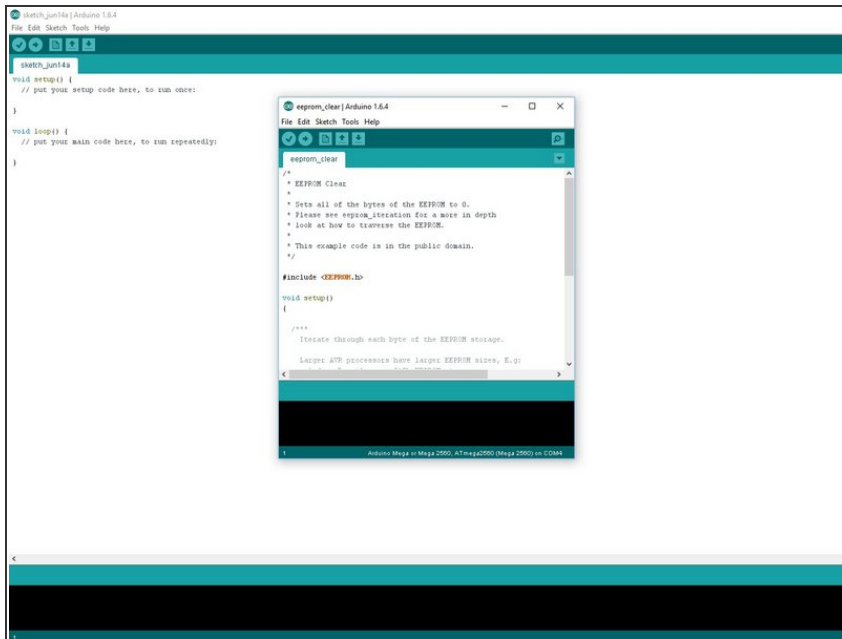
- If you are using a Windows machine you must first install a driver before you can communicate with the Mini RAMBo via your computer. users of other operating systems can skip to the next step.
- We have created video Instructions of for this process which can be viewed here: https://youtu.be/B8CV9DC_6hk
- Download the USB Driver: <http://download.seemecnc.com/RAMBOUSBDRIVER...>
- Extract the files (we previously discussed how to extract files)
- Plug in the Mini RAMBo with the supplied USB and let Windows “fail” to find the correct driver for the board.
- Open up the device manager by right-clicking on “Computer” or “My Computer” and select “Properties” followed by “Device Manager”. Scroll down to the “Unknown Devices” entry and right-click on the RAMBo entry. Choose “Update Driver” and then “Browse my computer for driver software” (or something similar to this).
- Choose “Let me pick from a list of device drivers on my computer”, then click the button for “Have Disk”. Browse to where you unzipped the file you downloaded and then click “OK”. It may complain (depending on OS) that the driver isn’t signed – allow it to install it anyway. The RAMBo will now appear on your computer as a standard serial port.
- Note the COM PORT that is assigned for use later in the setup.

Step 4 — Configuring Arduino



- Before we can use the IDE to upload the firmware to the Mini RAMBo controller, we need to tell the Arduino IDE what kind of board we have and what communications port it needs to use in order to perform the upload task.
- Click on the “Tools” menu item and then click on “Board” and then “Arduino Mega or Mega 2560”.
- Click on the “Tools” menu item and then click on “Processor” and then “AT Mega (Mega 2560)”.
- Next, you'll need to tell the Arduino IDE what port to talk to the RAMBo on. To do this, click on “Tools”, “Serial Port” and then choose the COM port that your RAMBo appears as on your computer. (you can find this in the device manager)

Step 5 — Test Upload



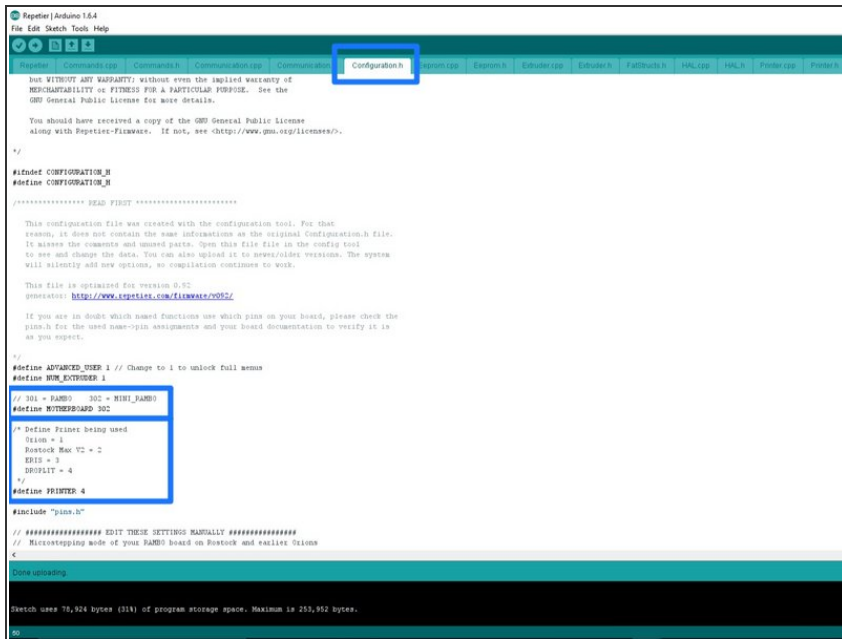
- We have created video Instructions of for this process which can be viewed here: <https://youtu.be/CK5jdoCyp1g>
- To test the upload we are going to clear the EEPROM from the Mini RAMBo board.
- As directed in the video, within Arduino go to File > Examples > EEPROM > EEPROM Clear
- This will open a new instance of Arduino with the EEPROM Clear Sketch.
- Click the Upload button (rightward pointing arrow)
- Once the sketch has been uploaded you will see DONE UPLOADING in the bottom of the Arduino IDE

Step 6 — Modify any Upload Firmware



- Insert wisdom here.

Step 7 — Installing Firmware



```

Repetier | Arduino 1.8.4
File Edit Sketch Tools Help
Configuration.h
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
You should have received a copy of the GNU General Public License
along with Repetier-Firmware. If not, see <http://www.gnu.org/licenses/>.
*/
#define CONFIGURATION_H
#define CONFIGURATION_H
/***** READ FIRST *****/
This configuration file was created with the configuration tool. For that
reason, it does not contain the same informations as the original Configuration.h file.
It mixes the comments and unused parts. Open this file file in the config tool
to see and change the data. You can also upload it to specialized versions. The system
will silently add new options, so compilation continues to work.
This file is optimized for version 0.92
generator: <http://www.repetier.com/firmwares/092/>
If you are in doubt which named functions use which pins on your board, please check the
pins.h for the used name-pin assignments and your board documentation to verify it is
as you expect.
*/
#define ADVANCED_USER_1 // Change to 1 to unlock full menu
#define HW_COUNTER_1
// 301 = RAMBO 302 = MINI_RAMBO
#define MOTHERBOARD 302
/* Define Printer being used
  Printer = 1
  Rostock Max V2 = 2
  EDIS = 3
  DROPLIT = 4
*/
#define PRINTER 4
#include "pins.h"
/***** EDIT THESE SETTINGS MANUALLY *****/
// Microstepping mode of your RAMBO board on Rostock and earlier 51mm
<
Done uploading
Sketch uses 76,924 bytes (31%) of program storage space. Maximum is 255,952 bytes.
  
```

- We have created video Instructions of for this process which can be viewed here: https://youtu.be/_uoq0kK2gWk
- In Arduino choose FILE > OPEN, then navigate to the firmware you downloaded : Firmware -master > Firmware -master > Repetier Firmware > Repetier > Repetier (this file has the Arduino Icon next to it) Select the file and choose open.
- With the firmware open in Arduino, click on the configuration.h tab near the top center of the screen.
- Verify that line 42 matches this: `#define MOTHERBOARD 302`
- Change line 50 to match this: `#define PRINTER 4`
- Save the changes & Click the compile button (check mark in the upper left corner of Arduino)
- Click the upload button (right facing arrow in the upper left corner of Arduino)
- The firmware has now been uploaded to the Mini RAMBo board.

Step 8 — Download NanoDLP Software



- Download NanoDLP: <http://www.nanodlp.com/nanodlp.zip>
- Extract the files after the download has completed.

Step 9 — Image the SD Card



- Based on your computer's operating system follow one of these guides for:
 - Windows: <https://www.raspberrypi.org/documentatio...>
 - MAC: <https://www.raspberrypi.org/documentatio...>
 - Linux: <https://www.raspberrypi.org/documentatio...>
- NOTE: To copy NanoDLP SD image file, you need a computer with card reader.

Step 10 — Boot the Raspberry Pi and Locate it



- Put microSD card into Raspberry Pi and turn the power to the Droplit v2 on
- Connect an ethernet cable to the Raspberry Pi and your Router (this is a one time setup requirement until the wifi has been connected)
- To find out your Raspberry Pi's IP address open your computer's network area. Or visit the online dashboard <http://www.nanodlp.com/dashboard> to see online nanoDLP printers in your network